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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,780	10/17/2003	Reinhold Klipper	MO5664D/LeA 33,	9841
7590	06/01/2004		EXAMINER	
Godfried R. Akorli, Bayer Chemicals Corporation Patents and Licensing 100 Bayer Road Pittsburgh, PA 15205			ZALUKAËVA, TATYANA	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,780

Applicant(s)

KLIPPER ET AL.

Examiner

Tatyana Zalukaeva

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/643,049.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/17/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1713

DETAILED ACTION

1. Applicants are reminded to update a continuity data.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1713

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-16 and 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm (U.S. 4,444,961) in view of Klipper et al (U.S. 4,952,608) and in further view of Surowiec et al (U.S. 5,804,606).

The claimed process is a compilation of several conventionally used processes. Thus, Timm discloses a method of making a monodisperse crosslinked vinylaromatic polymer, which is acknowledged by Applicants on page 3, lines 13-17 of the instant Specification. The process is polymerization uniformly sized monomer droplets of monomers as per instant claims (see abstract, col.1, lines 15, 16, col.2, lines 53, 54, col.3, lines 20-23, paragraph bridging col. 8 and 9, col.9, lines 60-65, col.10, lines 1-25). Timm further teaches that after the polymerization is completed, the resulting polymer can be converted to ion exchange resins using techniques well known in the art (col.14, lines 45-55), Timm goes even further by suggesting that chelate resins are also easily prepared from the cross-linked polymers by techniques well known in the art such as those wherein the haloalkylated polymer is aminated and the aminated polymer subsequently reacted with a suitable carboxyl containing compound, e.g., chloroacetic acid, or wherein the haloalkylated polymer is directly reacted with a suitable amino acid such as iminodiacetic acid or glycine or an aminopyridine such as 2-picolylamine or N-methyl-2-picolylamine (see col.15, lines 12-23). Thus, Timm clearly suggests to those skilled in the art to prepare the chelate resins as instantly claimed.

Art Unit: 1713

Klipper teaches amidomethylation of polymer beads of Timm and conversion of amidomethylated bead copolymer of the instant claims, steps (b) and (c), including the instantly claimed embodiment of a phthalimide ether and sulfuric acid catalysis (see abstract, col.1, lines 27-55, col.3, line 18 through col.4, line 5, claims 3, 5, 6, 7).

Therefore, those skilled in the art motivated by the express suggestion of Timm and analogous polymers would have found obvious to produce ion exchange resins of Timm's polymers by the methods of Klippepr with the reasonable expectation of success.

The disclosure of Timm and Klipper does not specifically teach the conversion of aminomthylated beads into chelating groups. However, Timm clearly suggests the production of such chelators without explicitly specifying the sequence of procedures as instantly claimed.

Conversion of aminomethylated polymer beads into ion exchangers having the presently claimed chelating groups is well known and notoriously used in the art, see , e.g. prior art made of record, but not relied upon.

Thus, Surowiec teaches converting aminomethylated bead polymers to aminoalkylphosphonic acid groups or imidoacetic acid chelating groups (abstract, col.1, line 57 through col.2, line 23, col.4, lines 1-31, Examples 2 and 3, table 1, claim 5). Therefore, based on the suggestions and motivations of Timm and Clipper, it will be obvious to those skilled in the art at the time the invention was made to convert the aminomethylated polymer beads of Timm and Klipper into chelating group containing polymers, as taught by Surowiec and thus to arrive at the instant claims.

With regard to claims 19-24, Surowies teaches the ability of chelating group containing polymers to remove cations from brines and to remove metals from waste streams (abstract, claims 10-16).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 17, 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Surowiec et al.

Because of the nature of product-by process claims, the Examiner cannot ordinarily focus on the precise difference between the claimed product and the disclosed product. It is then Applicants' burden to prove that an unobvious difference exists. See *In re Marosi*, 218 USPQ 289, 292-293 (CAFC 1983).

See also footnote 11 O.G. Notice 1162 59-61, wherein a 35 USC 102/103 rejection is authorized in the case of product-by-process claims because the exact identity of the claimed product or the prior art product cannot be determined by the Examiner.

Furthermore there is no evidence, or no reason to believe that the instantly claimed process produces a different product, that of a Surowiec, consult *In re Thorpe*, 227 USPQ 964 (CAFC 1985), wherein the Examiner rejected product-by-

process claims over a product, which although prepared in a different manner, appeared to be the same (prima facie) as the claimed product.

In the instant case no Graham vs. John Deere analysis was made but rather the test set out in MPEP 706.03(e) and In re Marosi was applied while explaining why the claimed product does not patentably distinguish over the prior art under 35 USC 102/103.

Consult also *In re Brown*, 173 USPQ 685 (CCPA 1972), the Court of Customs and Patent Appeals (CCPA) explicitly approved the 102/103 rejection of a product-by-process claim over a reference which showed a product which appeared to be identical or only slightly different from the claimed product.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carbonnel et al (U.S. 4,002,564) (Example 1, claims 1-5); Smithy (U.S. 4,217,417) (col. 2, lines 36-55, claim 3); Eiffler et al (U.S. 5,278,193 (col. 4, line 19- col. 5, line 32) all disclose converting amine containing functional bead polymer into chelating ion exchange resin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tatyana Zalukaeva whose telephone number is (571) 272-1115. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 10/687,780
Art Unit: 1713

Page 7

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 24, 2004

Tatyana Zalukaeva
Primary Examiner
Art Unit 1713

A handwritten signature in black ink, appearing to read 'Zalukaeva', with a long, sweeping horizontal line extending to the right.